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Appl. No. : 10/729,017
Filed : December 5, 2003

REMARKS

In response to the Office Action mailed May 19, 2006 (hereinafter referred to as "the Office Action"), Applicant submits the foregoing amendments and following remarks. Applicant affirms election of Species 4, claims 1-4, 7-9, 12-26, and new claim 27 which is readable on the elected species. As indicated in the foregoing amendments claims 5, 6, and 10 are withdrawn, claim 11 is canceled, claims 1, 2, 7, 9, 12-15, 17-20, and 22 are amended, and claim 27 is added. The foregoing amendments contain no new subject matter. Accordingly, claims 1-4, 7-9, and 12-27 are respectfully submitted for further examination.

Election/Restrictions

Paragraph 2 of the Office Action indicates the application contains claims directed to the following patentably distinct species:

Group I, illustrated in figures 1A, 1B and 1C

Group II, illustrated in figures 2A, 2B and 2C

Group III, illustrated in figures 3A, 3B, and 3C

Group IV, illustrated in figure 4

Group V, illustrated in figure 5

Group VI, illustrated in figures 6A and 6B

Applicant affirms election of Species 4, claims 1-4, 7-9, 11-26, and new claim 27 which is readable on the elected species.

Paragraph 3 of the Office Action states "[t]he species are independent or distinct because the Applicant has not identified each species as an obvious variation." Applicant traverses this remark. Applicant respectfully submits that Groups I-V each refer to embodiments that disclose a speaker system having a port located external to the primary speaker enclosure and designed to increase acoustic energy produced by the speaker system for a selected frequency or selected bandwidth of frequencies such as low frequencies. Accordingly, Applicant reserves the right to argue that one or more claims are generic to one or more disclosed species or embodiments.

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Rejection of Claims 1-4, 7-9, 11-20, and 22-26 under 35 U.S.C. §102

Paragraph 5 of the Office Action indicates claims 1-4, 7-9, 11-20, and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoefler (US 6,771,787). Applicant respectfully traverses these rejections because amended independent claims 1, 9, 17, 18, 19, and 20 contain at least one limitation that is not taught by Hoefler, and Applicant submits that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *See* M.P.E.P. § 2131.

In the Office Action the Examiner asserts the conically tapered waveguide illustrated in Figure 1 of Hoefler as disclosing all the limitations of claims 1-4, 7-9, 11-20, and 22-26. Hoefler teaches a waveguide 14 “in the form of a hollow tube of narrowing cross sectional area” where “[w]alls of waveguide 14 are tapered, such that the cross-sectional area of the waveguide at first end 12 is larger than the cross-sectional area at the second end 16.” Hoefler col. 3, 1-4. The waveguide 14 in Figure 1 includes a small amount of acoustically absorbing material 13 placed near the transducer 10 “so that the waveguide 14 is low loss at low frequencies with a relatively smooth response at high frequencies.” Hoefler col. 1, 41-49.

Hoefler’s waveguide 14 is significantly different in structure and design from the subject matter of claims 1-4, 7-9, 11-20, and 22-26. For example, Hoefler’s disclosure of a tapered waveguide having conically shaped walls surrounding a singularly shaped volume of air (i.e., a “primary enclosure”) does not teach or disclose a port section having a “duct extending external to said primary enclosure, said duct enclosing a volume of air which is coupled to the volume of air of the primary enclosure to increase internal volume of the speaker system” (claims 1, 9) nor does it teach “porting means located external to the main disclosure” (claim 17), or a “port section comprising an elongated duct extending external to the primary enclosure (claims 18, 19, and 20). The dubbed “port section” of waveguide 14 (illustrated as Port Section A in the Office Action) in Hoefler has tapered walls, not cylindrical walls, and accordingly Hoefler does not teach a “cylindrical” duct (claims 4, 9), or that the port section is “cylindrical” or “substantially cylindrical” (claims 19, 20). In fact, Hoefler teaches away from a cylindrical port section or duct by illustrating and describing the advantageous “flatter” frequency response is generated with a tapered waveguide rather than an untapered waveguide. Hoefler, col. 4, 33-45, Figures 1, 2A and 2B.

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An aspect of the design of the port section claimed in claims 1, 9, 17, 18, 19, and 20 is to extend the low frequency response of the speaker system. For example, the limitations of the claims include:

“wherein said port section comprises dimensions designed such that select frequency components exiting the speaker system through the port section are in phase with corresponding frequency components produced by said speaker driver to extend low frequency response of said speaker system” (claim 1);

“wherein said port section is tuned to a selected frequency to extend low frequency response of said speaker driver” (claim 9);

“wherein said porting means is tuned to a selected frequency to extend low frequency response of said speaker driver and said porting means” (claim 17);

“a cylindrical port section comprising an elongated duct extending external to the primary enclosure and having a cross section diameter smaller than a cross section diameter of the primary enclosure volume, wherein said duct is tuned to a selected frequency of acoustic energy to extend low frequency response of the speaker driver” (claims 18 and 19); and

“wherein said port section is tuned to a selected frequency to extend low frequency response of said speaker system” (claim 20).

Hoeffler teaches none of these limitations. Instead of disclosing a waveguide designed to extend a low frequency response, Hoeffler's teaches a tapered waveguide 14 that *dampens* certain frequency responses to generate a flatter response. Specifically, in Hoeffler the waveguide 14 is designed or tuned so that “a frequency response for the waveguide system according to the invention is flatter than the untapered waveguide system.” Figures 2A and 2B illustrate the described waveguide is designed so that “[n]arrowband peaks (hereinafter ‘spikes’) in the two curves can be significantly reduced by the use of acoustically absorbing material (13 of FIG. 1)”. Hoeffler, col. 4, 33-45. In particular, the waveguide design “damps undesirable resonances and provides a smoother output [i.e., having less spikes] over the range of frequencies radiated by the waveguide.” Hoeffler, col. 2, 50-54. Hoeffler's design that damps undesirable frequencies is significantly different than the claimed aspects for extending a low frequency response.

Accordingly, Applicant respectfully asserts that claims 1, 4, 9, 17, 18, 19, and 20 are in condition for allowance for at least the reasons discussed above, and requests the claim rejections under 35 U.S.C. 102(b) be withdrawn and the claims be allowed. Additionally, as claims 2-4, 7,

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8, 12-6, 22-26 and new claim 27 depend from claims 1, 9, or 17-20 directly or indirectly, Applicant respectfully requests the claim rejections under 35 U.S.C. 102(b) be withdrawn and these claims be allowed for at least the same reasons.

Rejection of Claim 21 under 35 U.S.C. §1039(a)

Paragraph 6 of the Office Action indicates claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoefer (US 6,771,787). Applicant traverses this rejection. Claim 21 depends directly from independent claim 20. As discussed above, Hoefer does not teach or disclose all the limitations of claim 20. Accordingly, Applicant respectfully requests the rejection of claim 21 be withdrawn and submits that claim 21 is also in condition for allowance for at least the same reasons.

CONCLUSION

The applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, amendments to the claims for patentability purposes pursuant to statutory section 102 and 103, the reasons therefor, and arguments in support of the patentability of the pending claim set are presented above. In light of these amendments and remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested.

Any claim amendments which are not specifically discussed in the above remarks are not made for patentability purposes, and it is believed that the claims would satisfy the statutory requirements for patentability without the entry of such amendments. Rather, these amendments have only been made to increase claim readability, to improve grammar, and to reduce the time and effort required of those in the art to clearly understand the scope of the claim language. Furthermore, any new claims presented above are of course intended to avoid the prior art, but are not intended as replacements or substitutes of any cancelled claims. They are simply additional specific statements of inventive concepts described in the application as originally filed.

If there are any questions that may be resolved through a telephonic discussion, Applicant invites the Examiner to call Greg Hermanson at the telephone number listed below.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: August 21, 2006

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